

Notice of Allowability

Application No.

09/498,703

Examiner

ARMANDO RODRIGUEZ

Applicant(s)

TRISNADI, JAHJA I.

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to AMENDMENT FILED ON JANUARY 24, 2005.
2. ☒ The allowed claim(s) is/are 1, 19-49 and 63.
3. ☒ The drawings filed on 07 February 2000 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
- ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
- ☐ Examiner's Amendment/Comment
- ☒ Examiner's Statement of Reasons for Allowance
- ☐ Other _____

DETAILED ACTION

Response to Amendment

Claims 1,19-49,63 are pending.

Claims 2-18,50-62,64-68 have been canceled.

The 35 USC 103 rejection of claims 59,60,62 has been withdrawn based on applicant's amendment filed on January 24, 2005.

Allowable Subject Matter

Claims 1,19-49,63 are allowed.

The following is an examiner's statement of reasons for allowance:

After reviewing applicant's amendment, arguments and conducting an updated search none of the cited prior arts alone or in combination discloses the claimed invention of independent claims 1,19,34,41,44,47 and 63.

Regarding claim 1,

None of the cited prior arts alone or in combination discloses the claimed invention having the structural combination for reducing laser speckle as recited in independent claim 1, where a polarizing beam splitter configured to divide a first polarized laser output into a second polarized laser output and third polarized laser output, the first polarized laser output having a coherence length; a light guide comprising a polarization preserving fiber optic, the light guide configured to create an optical path difference between the second polarized laser output and the third polarized laser output, the optical path difference being at least about the coherence length, the light guide being configured to direct the second polarized laser output to the

Art Unit: 2828

polarizing beam splitter such that the polarizing beam splitter combines the second polarized laser output and the third polarized laser output into a fourth laser output and a depolarizing screen coupled to the fourth laser output, the fourth laser output illuminating the depolarizing screen.

Regarding claims 19-33,

None of the cited prior arts alone or in combination discloses the claimed invention having the structural combination for reducing laser speckle as recited in independent claim 19, where a polarizing beam splitter configured to divide a first polarized laser output into a second polarized laser output and third polarized laser output; a plurality of mirrors configured to create an optical path difference between the second polarized laser output and the third polarized laser output, the plurality of mirrors configured to direct the second polarized laser output to the polarizing beam splitter such that the polarizing beam splitter combines the second polarized laser output and the third polarized laser output into a fourth laser output; a piezoelectric transducer coupled to at least one of the mirrors, the piezoelectric transducer being driven by an electrical signal such that the optical path difference is varied by an amplitude, the amplitude being at least about a half wavelength of the polarized laser output, the electrical signal having an electrical signal frequency and a depolarizing screen coupled to the fourth laser output, the fourth laser output illuminating the depolarizing screen, the electrical signal frequency being at least a sufficient frequency such that laser speckle is reduced.

Regarding claims 34-40,

None of the cited prior arts alone or in combination discloses the claimed invention having the structural combination for reducing laser speckle as recited in independent claim 34, having means for dividing a first polarized laser output into a second polarized laser output and third polarized laser output; the first polarized laser output having a coherence length; the second laser output and the third laser output having orthogonal polarizations and having intensities that are about equal; means for oscillating an optical path length of the second polarized laser output by an amplitude and with an oscillation frequency, the amplitude being at least about a half wavelength of the first polarized laser output; means for combining the second polarized laser output and the third polarized laser output into a fourth laser output and a depolarization screen coupled to the fourth laser output, the fourth laser output illuminating the depolarizing screen, the oscillation frequency being at least a sufficient frequency such that laser speckle is reduced.

Regarding claims 41-43,

None of the cited prior arts alone or in combination discloses the claimed invention having the method steps for reducing laser speckle with the steps for dividing a first polarized laser output into a second polarized laser output and third polarized laser output, the second laser output and the third laser output having orthogonal polarizations and having intensities that are about equal, oscillating an optical path length of the second polarized laser output by an amplitude and with an oscillation frequency, the amplitude being at least about a half wavelength of the first polarized laser output, combining the second polarized laser output and the third polarized laser

Art Unit: 2828

output into a fourth laser output and illuminating a depolarizing screen, the oscillation frequency being at least a sufficient frequency such that laser speckle is reduced.

Regarding claims 44-46,

None of the cited prior arts alone or in combination discloses the claimed invention having the structural combination for reducing laser speckle as recited in independent claim 44, having means for dividing a first polarized laser output into a second polarized laser output and third polarized laser output; the second laser output and the third laser output having orthogonal polarizations and having intensities that are about equal; means for switching between the a first optical path length and a second optical path length for the second polarized laser output, a difference between the first optical path length and the second optical path length being about an odd multiple of a half wavelength of the first polarized laser output; means for combining the second polarized laser output and the third polarized laser output into a fourth laser output, means for diverging the fourth laser output in a first direction to create a fifth laser output, a scanning mirror coupled to the fifth laser output, the scanning mirror reflecting the fifth laser output to create a line illumination, and a depolarizing screen illuminated by the line illumination, the scanning mirror repeatedly scanning the line illumination across a portion of the depolarizing screen such that the means for switching maintains the first optical path length for a first scan, switches to the second optical path length for a second scan, and alternates between the first optical path length and the second optical path length for subsequent scans.

Regarding claims 47-49,

None of the cited prior arts alone or in combination discloses the claimed invention having the method steps for reducing laser speckle with the steps for dividing a first polarized laser output into a second polarized laser output and third polarized laser output; the second laser output and the third laser output having orthogonal polarizations and having intensities that are about equal; switching between the a first optical path length and a second optical path length for the second polarized laser output, a difference between the first optical path length and the second optical path length being about an odd multiple of a half wavelength of the first polarized laser output; combining the second polarized laser output and the third polarized laser output into a fourth laser output; diverging the fourth laser output in a first direction; scanning the fourth laser output in a second direction across a portion of a depolarizing screen in a first scan with the first optical path length, in a second scan with the second optical path length, and in subsequent scans alternating between the first optical path length and the second optical path length, the second direction being orthogonal to the first direction.

Regarding claim 63,

None of the cited prior arts alone or in combination discloses the claimed invention having the structural combination for reducing laser speckle as recited in independent claim 63, having means for dividing a first polarized laser output into a second polarized laser output and third polarized laser output, the means for dividing comprising a polarizing beam splitter, the first polarized laser output having a coherence length, the second polarized laser output and the third polarized laser output having

Art Unit: 2828

orthogonal polarizations and having intensities that are about equal; a light guide comprising a polarization preserving fiber optic, the light guide coupled to the second polarized laser output, the light guide creating an optical path difference between the second polarized laser output and the third polarized laser output, the optical path difference being at least about the coherence length; means for combining the second polarized laser output and the third polarized laser output into a fourth laser output, the means for combining comprising the polarized beam splitter and a depolarizing screen coupled to the fourth laser output.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ARMANDO RODRIGUEZ whose telephone number is 571-272-1952. The examiner can normally be reached on 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MINSUN HARVEY can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2828

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



ARMANDO RODRIGUEZ
Examiner
Art Unit 2828



MINSUN HARVEY
SUPERVISOR
Art Unit 2828

AR/MH